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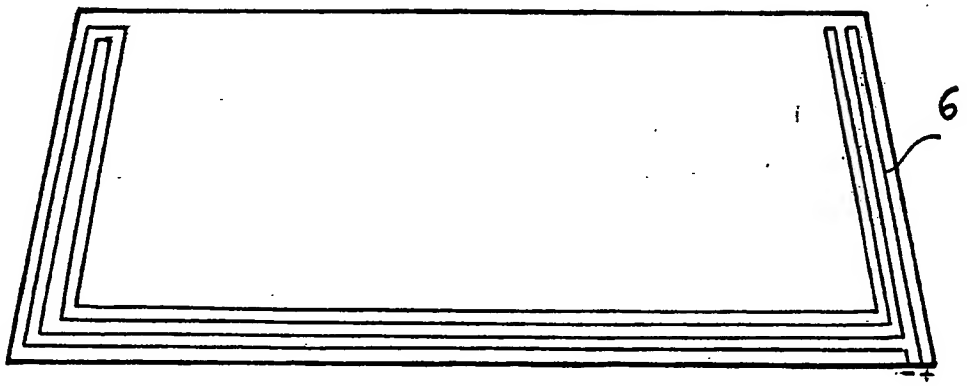
(54) Title: DEVICE OBVIATING THE SNOW ACCUMULATION ON THE WINDSCREEN-WIPER MOTION LIMIT IN THE WINDSCREEN OF THE MOTOR VEHICLES



(57) Abstract

The thermic device foresees an electric main (1) conducting to a relay (2), to a dial lamp switch (3), to a fuse (4) and with a battery (5) for feeding a thermal resistance filament system (6). Said filaments (6) incorporated into windscreen, or in other ways put onto or into the same, permit an action on the external zone, both to the sides and to the base, of the same motor vehicle windscreen determining the snow accumulation melting on said zone and acting as windscreen wiper aid.

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"Device obviating the snow accumulation on the windscreen-wiper motion limit in the windscreen of the motor vehicles".

The invention refers to a thermic intervention system into the windscreen which comes to preserve the working order of the windscreen-wiper devices and acting with the same it maintain free the normal field view during the snowfalls preventing the snow accumulation on the windscreen-wiper motion limits which comes to form owing to the continuous transport action effected by the windscreen-wiper blade.

Actually to maintain free during a snowfall a sufficient windscreen space so to permit the visibility for the driwing, the motor vehicle driver must start the windscreen-wiper but behaving like this he comes to impair its working order because said means is able to move the snow from the wall but it is not able to throw down the same from the windscreen. Consequently the snow removed from a certain position of the wall comes to accumulate in progression on the sides and on the base of the motion device or devices and risen as overall mass and as compactness, owing to the beating effect operated on it from the windscreen-wiper blade, it comes to reduce the range of the windscreen-wiper blade unable to reach to its motion limit,

condition this which determines the quick strain of the driving gear electrical equipment of the windscree-wiper with consequent its blocking which compels the driver to stop.

The invented system permits the solution of the above cited problem by means of a device with thermal filaments, acting on the lower external zone and on the side zones of the windscreen, which come to act as aid for the conventional windscreen-wiper melting for heat effect the now just fallen in said zones. In this way it is realized the melting in continuous of the fallen snow moved by the blades preventing the accumulation and consequently avoiding the windscreen-wiper blocking. In particular the action in continuous of the windscreen-wiper, which moves the snow from the central zone to the side ones of the windscreen, and of the invented thermic device, which operates the melting in said side zones, permits to maintain free all the field of view of the windscreen.

The invented system foresees a thermic device with an electric main 1 conducting to a relay 2, to a dial lamp switch 3, to a fuse 4 and with a battery 5 for feeding a resistance filament system 6. Said filaments 6 incorporated into the windscreen, or in other ways put onto or into the same, permit an action on the external zone, both to the sides and to the base, of the same motor vehicle windscreen determining the snow accumulation melting on said zone. The thermic device can be in different ways arranged on any other transparent part, in some way equipped with a windscreen-wiper, able to protect the driver of a motorcycle, of an hydrofoil, of a cabin motor boat, or a touring plane or similar to the wind and to other atmospheric agents ensured him the driving visibility. In a realization version it is foreseen the thermal resistance filament 6 disposition on all the windscreen external zone so to permit the snow melting besides the three accumulation sides also the upper part of the windscreen surface where the windscreen-wiper blade is not able to intervene.

Realization version of the invented device is illustrated in approximate way in the drawings of sheet 1. Referring to this sheet 1 fig.

is front partial view of a motor vehicle for showing, in sketched view on the continuous external zone on the sides and on the base of the windscreen, a thermic device according to the invention makes of a thermal resistance filaments 6 incorporated into the same windscreen. Fig. 2 is schematic view of a windscreen with visible the thermal resistance filaments 6. Fig. 3 is electric block diagram for the operation of the device with thermal resistance filaments 6 as showing in fig. 2.

In the realizations the applying type and way and also the materials of the thermic device could be variously foreseen. In alternative the system of thermal resistance filaments 6 can be put in the immediate windscreen nearness into the body work with eventual forced inlet of hot air flow by means of channeling for inlet form the outside equipped with air jet dispenser with nozzles uniformly distributed on line.

Claims.

1) Device obviating the snow accumulation on the windscreen-wiper motion limit in the windscreen of the motor vehicles foreseen an electric main (1) conducting to a relay (2), to a dial lamp switch (3), to a fuse (4) and with a battery (5) for feeding a thermal resistance filament system (6) characterized by the fact that said filaments (6) incorporated into the windscreen, of in other ways put onto or into the same, permit an action on the external zone, both to the sides and to the base, of the same motor vehicle windscreen determining the snow accumulation melting on said zone.

2) Device obviating the snow accumulation on the windscreen-wiper motion limit in the windscreen o fhte motor vehicles, as in claim 1), characterized by the fact that the device could foresee the disposition of the thermal resistance filaments (6) on all the windscreen external zone so to permit the snow melting besides the three accumulation sides also the upper part of the windscreen surface where the windscreen-wiper blade is not able to intervene.

3) Device obviating the snow accumulation on the windscreen-wiper motion limit in the windscreen of the motor vehicles in which in a version the thermal resistance filaments (6) could be put in the immediate windscreen nearness into the body work with eventual forced inlet of hot air flow by means of channeling for inlet from the outside equipped with an air jet dispenser with nozzles uniformly distributed on line.

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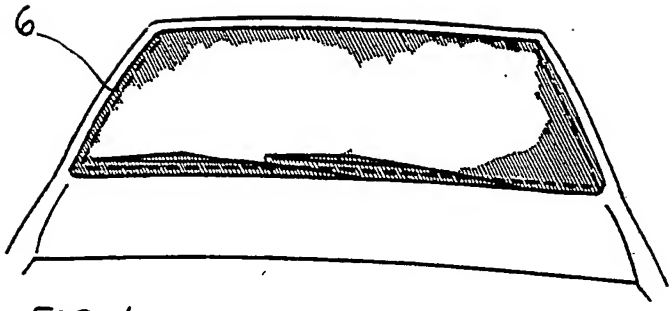

FIG. 1

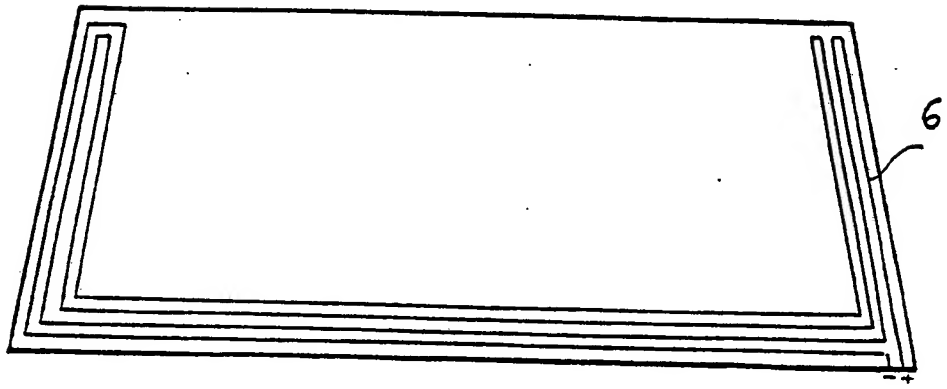

FIG. 2

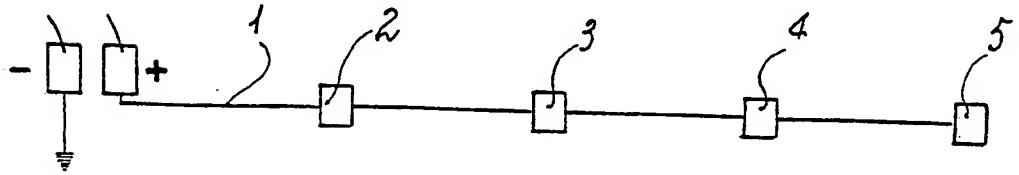

FIG. 3

INTERNATIONAL SEARCH REPORT

International Application No PCT/IT 92/00023

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC[5]: H 05 B 3/84

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC[5]	B 60 H,B 60 J,H 05 B

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [8]

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category [10]	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
X	US, A, 1 970 482 (M. ZAIGER) 10 November 1933 (10.11.33) see fig. 2. --	1
Y	DE, A1, 2 000 655 (SPIEGELGLASWERKE GERMANIA) 15 July 1971 (15.07.71), see fig. --	1
Y	US, A, 4 373 130 (KRASBORN et al.) 08 February 1983 (08.02.83), see abstract; fig. --	1
Y	DE, A1, 3 923 687 (SWF AUTO-ELECTRIC) 24 January 1991 (24.01.91), see abstract. --	3
Y	US, A, 2 030 117 (L.T. PAGE) 14 July 1934	3

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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
30 October 1992	12 NOV 1992
International Searching Authority	**Signature of Authorized Officer**
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category *	Citation of Document, ** with indication, where appropriate, of the relevant passages	Relevant to Claim No.
	(14.07.34), see fig.	
A	--	2
A	DE, A1, 4 109 133 (HÄNLE et al.) 22 August 1978 (22.08.78), see fig.	1
